

REMARKS/ARGUMENTS

The Office action dated September 28, 2009 has been received and carefully considered. By this amendment, claims 1-3, 5, and 9-20 have been amended. After entry of this amendment, claims 1-20 will be pending. In view of the amendments and the following remarks, Applicants respectfully request reconsideration.

Amendments

(a) As amended herein, claim 1 (and claims 4, and 6-11 by virtue of their dependency on amended claim 1) expressly requires *a food product for human consumption that comprises as an ingredient a comminuted whole coffee cherry or an extract of a whole coffee cherry*. Moreover, amended claim 1 also requires that the coffee cherry is *a whole coffee cherry that is quick-dried to particular mycotoxin specifications*. Support for the amendments is provided, for example, on page 10, lines 9-17. Amendments to claims 2, and 11-13 find support in page 10, lines 9-17, and amendments to claims 9-10 find support in page 5, lines 9-11. Amendments to claims 3, 5, and 14 were made to conform the language to amended claim 11.

(b) Similarly, amended claim 15 (and dependent claims 16-18) expressly requires *a mixture for production of a tea that comprises water and quick-dried whole coffee cherries, wherein the coffee cherries are present in comminuted form*. Support for the amendments is provided, for example, on page 14, lines 4-7. Amendments to claims 16-18 were made to conform the language to amended claim 15.

(c) Similarly, amended claim 19 (and dependent claim 20) expressly requires a quick-dried *sub-ripe* whole coffee cherry. Support for the amendment is provided, for example, in claim 20 as originally filed. Amendments to claims 20 find support in page 10, line 20.

Reply to the Examiner's Response

(1) In the office action, the examiner stated on page 15, paragraph 42, that applicant had defined the term "quick-dried" in the specification as "...using heated air exposure to sun and/or ambient air on page 3, lines 24-26..." Such assertion is incorrect. The cited passage teaches that

"...The (sub-ripe) coffee cherries may be quick-dried using various methods, however, it is *generally preferred* that the coffee cherries are quick dried using heated air or exposure to sun and/or ambient air...(emphasis added)"

It should be noted that the applicant provided an *express definition* for the term "quick-dried" in the specification on page 6, line 5-9 and provided an example for such process:

"...As further used herein, the term "quick-dried" coffee cherry means that the whole coffee cherry is dried under a *protocol that limits growth of molds, fungi, and/or yeast to an extent such that the dried coffee cherry will exhibit mycotoxin levels that are below 20 ppb for total aflatoxins, below 5 ppm for total fumonisins, below 5 ppm for total vomitoxins, and below 5 ppb for ochratoxins*. Consequently, quick-dried coffee cherries are typically dried within 0-48 hours (and more preferably between 6-24 hours) of the harvest such that the residual water content is no higher than 20% (wt/wt), and more typically no higher than 6-12% (wt/wt) ... (emphasis added)".

Clearly, applicant's definition of a "quick-dried" coffee cherry is very specific and tied to any protocol that limits growth of microorganisms to an extent such that certain mycotoxins are at or below specified levels. Consequently, the office's assertion that Sivetz' teaching of sun-drying and mechanical drying would be the same as "quick-drying" is incorrect. Clearly, *Sivetz fails to teach a "quick-dried" coffee cherries*. For a further discussion of mycotoxins and drying processes, see below at (3).

(2) In the office action, the examiner stated on page 16, paragraph 43, that it would be applicant's argument that:

"...Sivetz's reference is a production of coffee beans, wherein processing step to product coffee bean product, in which food product are neither taught nor suggested...."

It is unclear what the office intended to express. It is assumed that the office intended to express that (a) Sivetz teaches processing of natural coffee to make a soluble coffee, (b) that soluble coffee plus water results in a beverage, and (c) that therefore soluble coffee would be an ingredient in a food product as the beverage is a food product. However, such reasoning fails to take into account that the ingredient must be a whole coffee cherry. To even more clearly point out the nature of the ingredient, the applicant amended the claims. As amended herein, claim 1

expressly requires that *the ingredient in the food product is a comminuted whole coffee cherry or an extract of an optionally comminuted whole coffee cherry*. In contrast, Sivetz teaches at best a coffee beverage made from soluble coffee that is prepared from roasted coffee beans.

(3) In the office action, the examiner stated on page 16, paragraph 44, that it would be expected that:

"...composition of Sivetz et al. containing *natural preservatives such as mycotoxins* would fall within the scope of claim, since the claimed end product may encompass a wide range of amount of mycotoxin, aflatoxin, fumonisins and ochratoxins are well recognized in the art of botany, mycology and the coffee industry....(emphasis added)"

At the outset, it should be noted that *mycotoxins are not preservatives but highly toxic metabolites of certain fungi* (as is specifically discussed on page 2, items 3-8 of the reference entitled "Codex Alimentarius Commission" that was cited by the office).

With respect to the assertion that applicant's claimed end product may encompass a wide range of amount of mycotoxin, aflatoxin, fumonisins and ochratoxins, the applicant agrees to the extent that *it is well known that mycotoxins are commonly found at relatively high quantities on coffee cherry*. Indeed, it is also well known that *such high concentrations are present on the cherry despite various drying methods, including conventional sun drying and hot air drying, even where detoxification is used*. In support of such argument, the applicant points to U.S. Pat. App. No. 2002/0187239, and particularly Figures 1-3, and paragraph [0038]. In further support, the applicant also points to Bucheli (J. Agric Food Chem, 2000; also cited by the office) who clearly teaches that *sun drying consistently lead to mycotoxin formation* (see abstract).

Clearly, the cited art teaches significant presence of mycotoxins, and that the mycotoxins are present regardless of the manner of conventional drying. Moreover, the prior art also establishes that even where conventionally sun- or hot-air-dried coffee cherries are subjected to a detoxification process, the quantity of the mycotoxins still exceeds that of the quantities required by the claims.

(4) In the office action, the examiner stated on page 16, paragraph 45, that it would be expected that:

"...the claims include mycotoxin levels of zero, cited "less than", (claim 1, line 4) and no mention of these mycotoxins is mentioned in Sivetz et al, hence the range has the common endpoint of zero since the claimed range is or "less than" which encompasses zero. The *lack of mycotoxins levels is considered anticipatory* and reads on the claimed range of "less than 5 ppm".(emphasis added)"

Certainly, the applicant agrees that the limitation of "less than" includes zero. However, it is well established that to serve as anticipatory where a reference is silent about the asserted inherent characteristic, the gap in the reference must be filled using extrinsic evidence, and such evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." *Continental Can Co. USA v. Monsanto Co.*, 948 F.2d 1264, 1268, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991). Therefore, *absent extrinsic evidence in support of the alleged anticipatory teaching, the office's assertion that lack of any teaching of mycotoxin concentrations would anticipate a zero concentration of mycotoxins is ill founded.*

Moreover, in light of (a) the office's argument that it would be well known in the art that a wide range of amounts of mycotoxins would be present on coffee cherries, and (b) the express teaching of significant presence of mycotoxins on coffee cherries in U.S. Pat. App. No. 2002/0187239 and Bucheli (J. Agric Food Chem, 2000; cited by the office), the *extrinsic evidence is contrary to the office's position*. Remarkably, the office stated on page 8, paragraph 20, of the office action that the prior art would teach coffee cherries being subjected to contamination and that contaminants are present from the field to the warehouse, which is also contrary to the examiner's position. Absent specific reference to prior art that would describe that zero mycotoxin concentration is necessarily present in Sivetz, the office's argument is improper.

(5) In the office action, the examiner stated on page 17, paragraph 46, that:

"...Sivetz's natural coffee is considered as food ingredient to a food product, coffee beverage as discussed above to amended claim 1. Sivetz et al. meets the limitations of food product as cited in the instant claim ".(emphasis added)"

First, it is noted that the term "natural coffee" is a term of art and refers to coffee that has been prepared using the dry methods (see Sivetz page 79, second paragraph). In this context, the applicant also refers to the same reference (see Sivetz page 82, line 5 et seq.) where *it can be*

readily seen that "natural coffee" necessarily can not be quick dried. For at least this reason, the office's argument is factually incorrect.

Second, as noted above at (2), Sivetz's natural coffee can not be properly considered a food product and as such also fails to meet every element of the claims.

Third, the office appeared to assert that claims 2-5, 13-17, and 19-20 included the term *comminuted* and that the claims therefore would also include the coffee bean. It should take no further discussion that where the claim recites a "comminuted whole coffee cherry" that (a) the claims expressly requires presence of the entire fruit, and (b) that the claim includes the bean next to other components of the coffee cherry. However, *the reverse is not true as a reference that teaches a bean does not teach the whole coffee fruit.*

Fourth, the examiner stated on page 17, paragraph 46, that:

"... The cited references in combination with Sivetz's quick-dried whole coffee cherry processed into natural coffee, food ingredient that it is reasonable expectation of success would motivate the skill artisan to modify the teachings of Sivetz et al. and cited references, Batisa, Frank, Helferich, Mann, Soucy and Johnson, CCFAC and USDA to arrive at the instantly claimed composition..."

It is entirely unclear what the office intends to express. The office has failed to provide any reasoning as to a specific motivation for combination of the specific references, and as to why one of ordinary skill in the art would have an expectation of success for such combination.

(6) In the office action, the examiner stated on page 18, paragraph 47, that:

"...In response to *applicant's argument*, Drunen does not disclose the whole coffee cherry in preparation and notes that *Drunen uses coffee cherry*. ".(emphasis added)"

First, it is noted that the *examiner mis-quotes applicant's statement*. More particularly, the applicant agreed that the term "coffee cherry" was used in the '915 patent, however, pointed to column 1, lines 15-21 and column 1, lines 56-58 of the Drunen patent where the term "coffee cherry" was expressly defined:

"... Large quantities of agricultural waste products are generated during crop processing. Typically, these include fruit skin and pits

resulting from fruit crops such as peaches, apricots, cherries, plums, etc. or the "coffee cherry" husks that are removed from coffee beans in the processing of coffee..."(column 1, lines 15-21)
 "...While any suitable agricultural waste can be used in this novel process, it is particularly applicable to coffee cherries (the pulp that remains after removal of coffee beans)..." (column 1, lines 56-58).

It should be readily apparent from these passages that *the term "coffee cherry" in the '915 patent refers to the waste product of the coffee fruit, whereas the applicant expressly defined the term "coffee cherry" as the entire fruit.* Clearly, Drunen fails to teach a coffee cherry as expressly defined in applicant's specification.

With respect to the examiner's argument that Drunen would teach comminuted coffee cherries, the applicant notes that Drunen uses ground air dried coffee cherries (e.g., Example II). However, it is once more pointed out that Drunen's definition and teaching of a coffee cherry is contrary to applicant's definition.

35 USC §102

The Office rejected **claims 1, 4, 6-11, and 19-20** as being anticipated by Sivetz et al. (Coffee Technology). The applicant amended the claims to even more clearly differentiate the claimed subject matter over the cited art and provides the following observations.

Claim 1 as amended expressly requires as ***an ingredient to a food product a comminuted whole coffee cherry or an extract of an optionally comminuted whole coffee cherry***, and that the *coffee cherry is quick-dried such that a mycotoxin level of the coffee cherry is less than 20 ppb for total aflatoxins, less than 10 ppb for total ochratoxins, and less than 5 ppm for total fumonisins.*

These elements are neither taught nor suggested in Sivetz. As established above, Sivetz fails to teach a comminuted whole coffee cherry or an extract of an optionally comminuted whole coffee cherry as an ingredient to a food product. Similarly, and as also noted above, Sivetz clearly fails to teach quick-drying the coffee cherry to so arrive at a natural coffee as alleged by the office. Furthermore, Sivetz fails to teach the limitations with respect to the

mycotoxin levels as established above. As these elements are also required for the dependent claims, the same deficiencies for the rejection of claims 4, and 6-11 apply.

With respect to amended claim 19 it is noted that this claim yet again expressly requires that the coffee cherry is a quick-dried coffee cherry. As argued in (5) above, and as can be particularly well seen in Sivetz at page 82, line 5 et seq., the coffee cherries of Sivetz are not quick-dried. Based on these observations and above arguments, it should also be readily clear that the coffee cherries by Sivetz fail to meet the required mycotoxin levels. Finally, regarding the general observations on mycotoxin levels, the applicant refers to the discussion on mycotoxin levels in (3) above.

Based on the above amendments and arguments, the applicant believes that the rejection of claims 1, 4, 6-11, and 19-20 as being anticipated by Sivetz et al. should be overcome.

35 USC §103

The Office rejected **claims 1, 4, 6-9, 10-11, and 19-20** as being obvious over Sivetz et al. (Coffee Technology) and Drunen (U.S. Pat. No. 6,572,915) and further view of Johnson (U.S. Pat. No. 2,526,872), Soucy (U.S. Pat. No. 6,202,321), Bucheli et al., Batista et al., Frank, Helferich, Romani et al., and Codex Committee or USDA. The applicant respectfully disagrees for various reasons.

(1) With respect to the defects of Sivetz in light of the amendments to claims 1 and 19 and arguments provided above, the same considerations as above apply and are not reiterated here. The remainder of the cited art fails to remedy these defects, alone or in combination. Further, the office stated that the "... Examiner considers soluble coffee as food ingredient in a food product..." Such argument is not persuasive as soluble coffee is prepared from roasted coffee beans, which is entirely inconsistent with the requirements of claim 1.

(2) With respect to Batista, Frank, and Helferich, it is pointed out that these references generally teach mycotoxins as known contaminants. However, these references are mainly concerned with the *quality of coffee beans rather than the coffee fruit*. Similarly, Johnston

teaches fermentation of the pulped coffee fruit, which is yet again immaterial to the claimed subject matter. Mann is entirely silent on the use of coffee, let alone coffee cherries, and Soucy yet again teaches coffee beans, and not coffee cherries. With respect to the office's apparent parenthetical remark that the coca bean would be a coffee cherry, it is unclear how such position could be sustained. Alternatively, the applicant misunderstood. In that case, clarification is respectfully requested.

Based on the above, none of Batista, Frank, Helferich, Johnston, Helferich, and Soucy (alone or in combination) teach or suggest use of a quick dried coffee cherry as an ingredient in a food product as presently claimed. Batista, Frank, and Helferich are generally concerned with microbial contamination of coffee beans, and Johnston teaches fermentation of already pulped coffee cherries. Soucy is once again concerned with coffee beans, and Mann is entirely silent on the use of coffee. Therefore, *even if combined with Sivetz, that combination would fail to teach or suggest the presently claimed subject matter.*

(3) Notwithstanding the above defects, it is further noted that while the claims were rejected over Sivetz et al. and **Drunen**, and further view of Johnson, Soucy, Bucheli et al., Batista et al., Frank, Helferich, Romani et al., and Codex Committee or USDA, Drunen was not addressed in the reasoned statement. Thus, the rejection is incomplete.

(4) The examiner further stated on page 10, paragraph 25 that "...Bucheli, demonstrates that reduction of ochratoxin in coffee plant materials of coffee cherry can be achieved by properly drying whole fruit of the coffee sp..." However, the opposite is the case. Bucheli teaches on page 1360, right column, first paragraph:

"...However, the results obtained from the farms obtained demonstrate that the initial raw material quality, weather conditions during drying, drying management, presence of OTA-producing microorganisms, and local farm conditions undoubtedly play a more important role in OTA contamination of green coffee than the drying methodology used..."

In light of this teaching, and in further consideration of the teachings of U.S. Pat. App. No. 2002/0187239 (see discussion in reply to examiner's response, items (3) and (4) above), one of ordinary skill in the art would clearly not have had an expectation of success to reduce the

mycotoxin concentration as suggested by the examiner on page 11, paragraph 27. The same considerations apply to the rejection of claim 19. Consequently, for at least these reasons, the rejection of claims 1, 4, 6-9, 10-11, and 19-20 as being obvious over the cited art is improper and should be withdrawn.

The Office further rejected **claims 2-3, 5, 12-18, and 19** as being obvious over Sivetz et al. (Coffee Technology), Johnson (U.S. Pat. No. 2,526,872), Soucy (U.S. Pat. No. 6,202,321), Bucheli et al., Batista et al., Frank, Helferich, Romani et al., and Codex Committee or USDA and further view of Drunen (U.S. Pat. No. 6,572,915). The applicant respectfully disagrees for various reasons.

(1) With respect to the office's statement that the claimed invention would be disclosed in the references for reasons as provided in the rejection of claims 1, 4, 6-9, 10-11, and 19-20, the same defects and arguments as provided for that rejection s apply and are not reiterated here.

(2) With respect to Drunen, it is noted that while Drunen uses the term "coffee cherry", the definition and use of that term is entirely inconsistent with the definition and use of that term in applicant's specification. Once more, as discussed in item (6) of applicant's reply to examiner's response, Drunen defines in column 1, line 61 et seq. the term "coffee cherry" as

"...[The] waste material is the coffee cherry material left after coffee beans are removed..."

Furthermore, the examiner's assertion that Drunen would teach quick-drying is incorrect as Drunen makes reference to drum drying. Here, Drunen makes reference to certain advantages of such drying process (contact time of cherries with dryer), but does not make any reference to quick drying as defined by the applicant.

(3) With respect to claim 15 (and claims 16-18 by virtue of their dependence on claim 15) it is noted that the claim is drawn to a tea that is brewed from a comminuted quick-dried whole coffee cherry. In contrast, Drunen teaches a coffee product that includes an extract that is prepared from *coffee pulp*. Sivetz and the remaining cited art fails to remedy this defect. It should be noted that there is nothing in the cited art that would teach brewing of a quick-dried

coffee cherry to so obtain a tea product for human consumption. Sivetz teaches coffee cherry processing in which coffee cherries of varying ripeness stages are dried. However, such drying process is neither a quick-drying process as discussed above, nor is such process used to produce a tea from the dried cherries. Indeed, none of the art cited by the examiner uses a whole coffee cherry (comminuted or otherwise) as an ingredient for an item for human consumption, let alone a quick dried coffee cherry with the mycotoxin levels as presently claimed.

Based on the above amendments and arguments, the applicant believes that the rejection of claims 2-3, 5, 12-18, and 19 over the cited should be overcome.

In the event that the examiner would deem the claims still non-allowable, the undersigned would sincerely appreciate a phone call to discuss the cited art and to help identify allowable subject matter.

Request For Allowance

Claims 1-21 are pending in this application. The applicant requests allowance of all pending claims.

Respectfully submitted,
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Date: December 16, 2009

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